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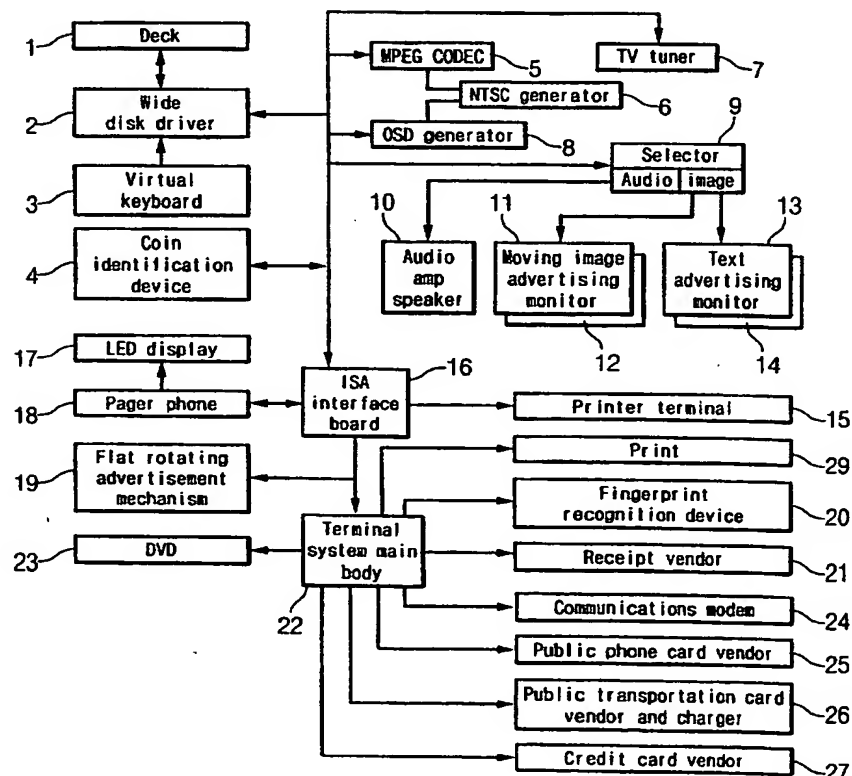
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(54) Title: AUTOMATIC APPARATUS FOR PROVIDING VARIOUS TYPES OF VISUAL INFORMATION



(57) Abstract: Disclosed is an automatic system for providing information and images comprising a moving image monitor for displaying in moving images advertising products and advertising information of chain stores selling the products; a text advertising monitor for displaying advertising information of network products and chain stores; a text advertising touchscreen including icons for enabling the printing of coupons of specific network products and coupons offered by chain stores; a wide disk driver for providing advertising images to the text advertising monitor and outputting a coupon print signal; a terminal system main body for providing advertising images to the moving image advertising monitor and outputting a coupon print signal, providing shopping and general information and search images of this information, and outputting a shopping and general information print signal, and performing a corresponding print operation.

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Automatic Apparatus For Providing Various Types Of Visual Information

BACKGROUND OF THE INVENTION

(a) Field of the Invention

5 The present invention relates to an automatic system for providing information and images in which various information on products and chain stores offering the products is provided to a user. More particularly, the present invention relates to an automatic system for providing information and images in which various advertisement information and shopping and
10 general information are displayed on a plurality of monitors, and which enables users to print searched information.

(b) Description of the Related Art

 Systems that provide image information are installed at public areas, typically either within or outside a public building. These systems provide
15 various advertising information, guide information, etc. in still, text, graphic, moving picture and animation form. Users can search information they require by pressing various buttons and/or touching icons provided on a touchscreen.

 Such systems utilize a predetermined operation program, and image
20 information that is stored on a storage medium such as a CD (compact disc) is displayed on a monitor. These systems are undergoing limited development for a variety of information systems and for government administrative network systems.

 However, since such image information systems are set up so that
25 users search image information that is stored on storage media, there is a limited amount of information that can be accessed (i.e., the information that can be stored is limited to the memory capacity of the storage media).

Further, these systems do not provide access to real-time data and also do not provide features such as the ability to issue coupons.

SUMMARY OF THE INVENTION

The present invention has been made in an effort to solve the above
5 problems.

It is an object of the present invention to provide an automatic system for providing information and images in which various advertisement information and shopping and general information on a plurality of monitors, and which enables users to print searched information.

10 To achieve the above object, the present invention provides an automatic system for providing information and images comprising a moving image monitor for displaying in moving images advertising products and advertising information of chain stores selling the products; a text advertising monitor for displaying advertising information of network products and chain
15 stores selling the products stored in a wide disk; a text advertising touchscreen including various icons for enabling the printing of coupons of specific network products and coupons offered by chain stores selling the products; a wide disk driver for providing advertising images to the text advertising monitor and outputting a coupon print signal for printing coupons
20 of network products and coupons offered by chain stores selling the products after advertising information is searched by a user operating the text advertising touchscreen; a terminal system main body for providing advertising images to the moving image advertising monitor and outputting a coupon print signal for printing coupons of advertising products and coupons
25 offered by chain stores selling the products after advertising information is searched by a user operating the moving image advertising touchscreen, and also providing shopping and general information and search images of this information as a touchscreen switch of the text advertising touchscreen is controlled to On, and outputting a shopping and general information print

signal; and a printer for receiving the coupon print signal and shopping and general information print signal from the wide disk driver and the terminal system main body, and performing a corresponding print operation.

According to a feature of the present invention, the terminal system
5 main body provides search images of chain stores and products sold by the chain stores to a touchscreen monitor, and if the touchscreen switch of the text advertising touchscreen is controlled to On, outputs a coupon print signal for printing a coupon.

According to another feature of the present invention, the terminal
10 system main body is connected to a server via an ADSL, a DSU, a communications model and a communications network to establish a multi-image advertising network, the server having a database of advertising information and shopping and general information displayed on the moving image advertising monitor and the text advertising monitor.

15 According to yet another feature of the present invention, the terminal system main body displays the advertising information displayed on the moving image advertising monitor simultaneously on the text advertising monitor until the text advertising touchscreen is controlled to On.

According to still yet another feature of the present invention, the
20 wide disk driver displays the advertising information displayed on the text advertising monitor simultaneously on the moving image advertising monitor if communications between the terminal system main body and the server are cut off.

According to still yet another feature of the present invention, the
25 printer prints coupons of advertising products and chain stores selling the products displayed on the moving image advertising monitor and the text advertising monitor, and selected shopping and general information displayed on the text advertising monitor.

According to still yet another feature of the present invention, a
30 pager phone is connected to the terminal system main body.

According to still yet another feature of the present invention, a DVD for providing images is connected to the terminal system main body.

According to still yet another feature of the present invention, one or more of a receipt vender, a public telephone card vendor, a public transportation card vendor and re-charger, and a credit card vendor is
5 provided in the terminal system main body.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate an embodiment of the invention, and, together with the description, serve to explain the principles
10 of the invention:

FIG. 1 is a block diagram of an automatic system for providing information and images according to a preferred embodiment of the present invention;

15 FIG. 2 is a multi-image advertising network constructed using the automatic system of the present invention;

FIG. 3 is a schematic front view of a terminal system according to a preferred embodiment of the present invention;

FIG. 4 is a schematic side view of a terminal system according to a
20 preferred embodiment of the present invention;

FIG. 5 is an example of an initial screen appearing on a touchscreen shown in FIG. 1; and

FIG. 6 is an example of activated pull-down menus of a touchscreen shown in FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Preferred embodiments of the present invention will now be described in detail with reference to the accompanying drawings.

FIG. 1 shows a block diagram of an automatic system for providing information and images according to a preferred embodiment of the present

invention.

With reference to the drawing, a moving image advertising monitor 11 displays advertising information including information on advertising products and chain stores offering the products. The moving image advertising monitor 11 compresses and extracts advertising information output by a DVD 23 by a terminal system main body 22 via an ISA (industry standard architecture) interface board 16 using an MPEG (Moving Picture Experts Group) CODEC 5 and an NTSC generator 6. The information is then converted to a signal format suitable for display on the moving image advertising monitor 11 or a text advertising monitor 13, then supplied to the moving image advertising monitor 11 or the text advertising monitor 13 as a selector 9 is operated. At this time, it is possible for TV signals received by a TV tuner 7 to be supplied to the selector 9, and sound signals, selectively supplied to the moving image advertising monitor 11 or the text advertising monitor 13, to be output through an audio amp speaker 10.

Advertising information displayed on the moving image advertising monitor 11 is searched on a moving image touchscreen 12, which is integrally formed with the moving image advertising monitor 11. The moving image touchscreen 12 includes select buttons for particular products and for outputting coupons for chain stores that offer the products. A plurality of icons are provided on the moving image touchscreen 12 such as a forward/back selection icon for enabling moving through moving image advertising screens, a stop icon for temporarily stopping an advertising screen, a coupon print icon for enabling the printing of coupons, a moving screen selection icon, a next/previous screen icon, and various number icons.

Advertising information of network sales products and chain stores, provided by a wide disk driver 2 including a virtual keyboard and a deck 1, is compressed and extracted by the MPEG CODEC 5 and the NTSC generator 6, after which the information is converted to signals suitable for display on

the moving image advertising monitor 11 or the text advertising monitor 13, then supplied to the moving image advertising monitor 11 or the text advertising monitor 13 as the selector 9 is operated as described above. Here, the wide disk driver 2 receives input from the virtual keyboard 3 and
5 reads a wide disk mounted on the deck 1 to receive various information.

Of course, text advertisements provided from the wide disk driver 2 or the terminal system main body 22 are converted to signals suitable for display on the moving image advertising monitor 11 or the text advertising monitor 13 by an OSD generator 8 or the NTSC generator 6, and they are
10 selected by the selector 9 for selective supply.

A text advertising touchscreen 14 includes a plurality of icons for enabling moving through advertising information displayed on the text advertising monitor 13, and for enabling searching of network products and printing chain store coupons. The text advertising touchscreen 14 also
15 includes a forward/back selection icon for enabling the user to search through network product advertising screens, a stop icon for temporarily stopping an advertising screen, a coupon print icon for enabling the printing of coupons, and an ON/OFF icon for controlling the operation of the wide disk driver 2.

20 The wide disk driver 2, including the virtual keyboard 3 which controls the wide disk driver 2 and the deck 1 which holds a wide disk, provides advertising images on the text advertising monitor 13, and, according to the operation of the text advertising touchscreen 14, searches advertising information and outputs print signals for printing coupons for
25 products and chain stores. If communications are cut off between the terminal system main body 22 and an ADSL 44 (see FIG. 2), a DSU 43 (see FIG. 2), a public communications network and communications modem (not shown), the wide disk driver 2 displays advertising information shown on the text advertising monitor 14 simultaneously on the moving image advertising
30 monitor 11. The wide disk driver 2 is installed with a predetermined program

to perform this function.

The moving image advertising monitor 11 and the text advertising monitor 13 display shopping and general information and search images of the information output from the DVD 23 by the terminal system main body 22 and applied through the ISA interface board 16, MPEG CODEC 5, OSD generator 8, NTSC generator 6 and the selector 9.

The terminal system main body 22 provides advertising images to the moving image advertising monitor 11, and, according to the operation of the moving image touchscreen 12, searches advertising information and outputs print signals for printing coupons for products and chain stores. With reference to FIG. 5, the terminal system main body 22, up until shopping and general information as well as search images of the information are displayed following the turning on of the text advertising touchscreen 14, performs control such that the advertising information displayed on the moving image advertising monitor 11 is displayed simultaneously on the text advertising monitor 13. The terminal system main body 22, with reference to FIG. 6, performs control to display shopping and general information and search images of the information in pull-down form, and enables shopping and general information to be printed by a printer 29.

The terminal system main body 22 uses a Pentium processor in which there is installed a predetermined operation program for performing general operations as described above.

After receiving coupon print signals and shopping and general information print signals output by the wide disk driver 2 and the terminal system main body 22, the printer 29 prints corresponding information. The printer 29 prints (in a predetermined format) coupons for advertising products and chain stores displayed on the moving image advertising monitor 11 and the text advertising monitor 13, and shopping and general information appearing on the text advertising monitor 13.

Elements of the present invention not yet described include a coin

identification device 4 for determining an amount of coins inserted by a user and providing corresponding information to the terminal system main body. Also, a printer terminal 15 enables connection to an external terminal. There is also provided a fingerprint recognition device 20 for recognizing a predetermined number of pre-installed fingerprints such that the system only operates for specific users. A flat rotating advertisement mechanism 19 is installed so that it is viewable to the exterior of the system and includes one or more fluorescent lights 28 (see FIG. 4). The flat rotating advertisement mechanism 19 rotates a flat advertisement panel that is connected to a motor for rotating the advertisement.

An operation of the system of the present invention structured as in the above will now be described.

The system of the present invention is such that the terminal system main body 22 is connected to the server 42, which includes the database 46 having advertising information and shopping and general information for display on the moving image advertising monitor 11 and the text advertising monitor 13, through the ADSL 44, DSU 43, communications modem and public communications network, thereby obtaining a multi image advertising network.

After storing on the database 46 advertising information and various shopping and general information provided by companies and information providers, the server 42 provides this information to the terminal system main body 22 through the ADSL 44, DSU 43, communication model and public communications network. At this time, the server 42 and the terminal system main body 22 perform two-way communications for displaying advertising information and shopping and general information, as well as their search images on the moving image advertising monitor 11 and the text advertising monitor 13.

If communication is realized between the server 42 and the terminal system main body 22 as described above, the advertising information and

shopping and general information, and their search images begin to be displayed on the moving image advertising monitor 11 and the text advertising monitor 13 repeatedly in predetermined cycles. If the On/Off icon of the moving image touchscreen 12 is controlled to On, network product advertising information begins to be displayed on the text advertising monitor 13 repeatedly in predetermined cycles. The repeated cycles at which information is displayed on the monitors 11 and 13 are determined by the companies and information providers.

Also, in the case where touchscreen switches of the moving image touchscreen 12 and the text advertising touchscreen 14 are operated, the moving image advertising monitor 11 and the text advertising monitor 13 do not repeatedly display advertising information and shopping and general information, but instead display advertising information and shopping and general information corresponding to the operation of the touchscreen switches together with the touchscreens 12 and 14. However, if after starting a search of advertising information and shopping and general information a user does not again operate the touchscreen switches for a predetermined time (e.g., 2-3 minutes), the moving image advertising monitor 11 and the text advertising monitor 13 again begin repeatedly displaying the advertising information and the shopping and general information. Such operation is controlled by the terminal system main body 22 and the wide disk driver 2.

An initial screen displayed on the text advertising monitor 13 is shown in FIG. 5. As shown in the drawing, left and right sides of the screen display advertising information and shopping and general information in text format for searching, and a central portion of the screen displays moving image advertising information on the moving image advertising monitor 11.

The text information of the text screen shown in FIG. 5 is such that service information in which coupons of discount chain stores and shopping and general information can be printed after advertising information and shopping and general information are searched using the automatic system

for providing information and images.

In the automatic system for providing information and images of the present invention, a public phone, a digital electronic device, an automatic ticket vendor, a credit card vendor, a cash identification device, etc. can be additionally mounted. By installing a separate program in the terminal system main body 22, extra functions can be provided in addition to those of searching advertising information and shopping and general information, which include electronic flea market information, traffic/map information, government service information, government document retrieval information, etc. Such extra functions include a public telephone function, a pager call function, a clock, automatic ticket vending, credit card vending, a cash identification function, etc.

If communications between the terminal system main body 22 and the server 42 are cut off when advertising information and shopping and general information and their searched images are displayed on the moving image advertising monitor 11 and the text advertising monitor 13, and advertising information of network products chain stores selling the products is displayed on the text advertising monitor 13, the network product advertising information displayed on the text advertising monitor 13 is displayed on the moving image advertising monitor 11. That is, if communications are cut off between the terminal system main body 22 and the server 42, the advertising information supplied from the terminal system main body 22 is discontinued such that the network product advertising information is displayed on the moving image advertising monitor 11.

If after searching advertising information displayed on the moving image advertising monitor 11 the user controls the forward back selection icon, the stop icon then the coupon print icon of the moving image touchscreen 12 in order to print out a coupon, the terminal system main body 22 outputs a print signal to effect printing of a coupon. Subsequently, the coupon print signal output from the terminal system main body 22 drives the

printer 29 in a coupon mode such that the printer 29 prints a predetermined coupon(s).

Further, if after searching network product advertising information displayed on the text advertising monitor 13 the user controls the forward
5 back selection icon, the stop icon then the coupon print icon of the text advertising touchscreen 14 in order to print out a coupon, the wide disk driver 2 outputs a print signal to effect printing of a coupon. Subsequently, the coupon print signal output from the wide disk driver 2 drives the printer 29 in a coupon mode such that the printer 29 prints a predetermined
10 coupon(s).

Also, if after searching advertising information and shopping and general information displayed on the text advertising monitor 13 the user controls the touchscreen switch of the text advertising touchscreen 14 to On in order to print out a coupon, the terminal system main body 22 outputs a
15 print signal and a shopping and general information signal to effect printing of a coupon and shopping and general information. Subsequently, the coupon print signal output from the terminal system main body 22 drives the printer 29 in a coupon mode such that the printer 29 prints a predetermined coupon(s). In addition, the shopping and general information signal drives
20 the printer 29 in an information print-out mode such that the printer 29 prints the shopping and general information in a predetermined format.

The information search images displayed on the text advertising monitor 13 by controlling the touchscreen switch of the text advertising touchscreen 14 to On appear in a pull-down format as shown in FIG. 6. That
25 is, the user works through the pull-down menu until finding the needed information then activating the print control. The printed information is provided in a predetermined format.

The system of the present invention can be provided with a card reader such that only specific users having cards are allowed access to
30 information.

With reference to FIGs. 3 and 4, a pager telephone 18 is provided on a side of the terminal system main body 22, and an LED display 17 is installed in an upper portion of the terminal system main body 22. Accordingly, telephone calls can be made with an installed separate
5 telephone line. That is, when inputting the number of the person a user intends to call, the number is displayed on the LED display 17 such that the user can verify correct input.

Further, one or more of a receipt vender 24, a public telephone card vendor 25, a public transportation card vendor and re-charger 26 and a
10 credit card vendor 27 is provided in the terminal system main body 22. Additionally, information terminals of a financial institution, airline, railroad company, etc. may be connected to the server 42 of FIG. 2 to enable vending of various cards and services.

With the system of the present invention, advertising information and
15 shopping and general information can be accessed. In addition, vending of receipts, vending of public phone cards, vending and charging of public transportation cards, vending of credit cards, public phone functions, etc. can be provided. Also, unlike conventional systems, the system of the present invention realizes a parallel structure interface such that the
20 connection of additional devices is easy, and revision of server or client programs can be easily performed using a tail method sub-program.

Although preferred embodiments of the present invention have been described in detail hereinabove, it should be clearly understood that many variations and/or modifications of the basic inventive concepts herein taught
25 which may appear to those skilled in the present art will still fall within the spirit and scope of the present invention, as defined in the appended claims.

WHAT IS CLAIMED IS:

1. An automatic system for providing information and images comprising:

5 a moving image monitor for displaying in moving images advertising products and advertising information of chain stores selling the products;

a text advertising monitor for displaying advertising information of network products and chain stores selling the products stored in a wide disk;

10 a text advertising touchscreen including various icons for enabling the printing of coupons of specific network products and coupons offered by chain stores selling the products;

a wide disk driver for providing advertising images to the text advertising monitor and outputting a coupon print signal for printing coupons of network products and coupons offered by chain stores selling the products after advertising information is searched by a user operating the
15 text advertising touchscreen;

a terminal system main body for providing advertising images to the moving image advertising monitor and outputting a coupon print signal for printing coupons of advertising products and coupons offered by chain stores selling the products after advertising information is searched by a
20 user operating the moving image advertising touchscreen, and also providing shopping and general information and search images of this information as a touchscreen switch of the text advertising touchscreen is controlled to On, and outputting a shopping and general information print signal; and

25 a printer for receiving the coupon print signal and shopping and general information print signal from the wide disk driver and the terminal system main body, and performing a corresponding print operation.

2. The system of claim 1 wherein the terminal system main body provides search images of chain stores and products sold by the chain
30 stores to a touchscreen monitor, and if the touchscreen switch of the text

advertising touchscreen is controlled to On, outputs a coupon print signal for printing a coupon.

3. The system of claim 1 wherein the terminal system main body is connected to a server via an ADSL, a DSU, a communications model and a communications network to establish a multi-image advertising network, the server having a database of advertising information and shopping and general information displayed on the moving image advertising monitor and the text advertising monitor.

4. The system of claim 1 wherein the terminal system main body displays the advertising information displayed on the moving image advertising monitor simultaneously on the text advertising monitor up until the text advertising touchscreen is controlled to On.

5. The system of claim 1 wherein the wide disk driver displays the advertising information displayed on the text advertising monitor simultaneously on the moving image advertising monitor if communications between the terminal system main body and the server are cut off.

6. The system of claim 1 wherein the printer prints coupons of advertising products and chain stores selling the products displayed on the moving image advertising monitor and the text advertising monitor, and selected shopping and general information displayed on the text advertising monitor.

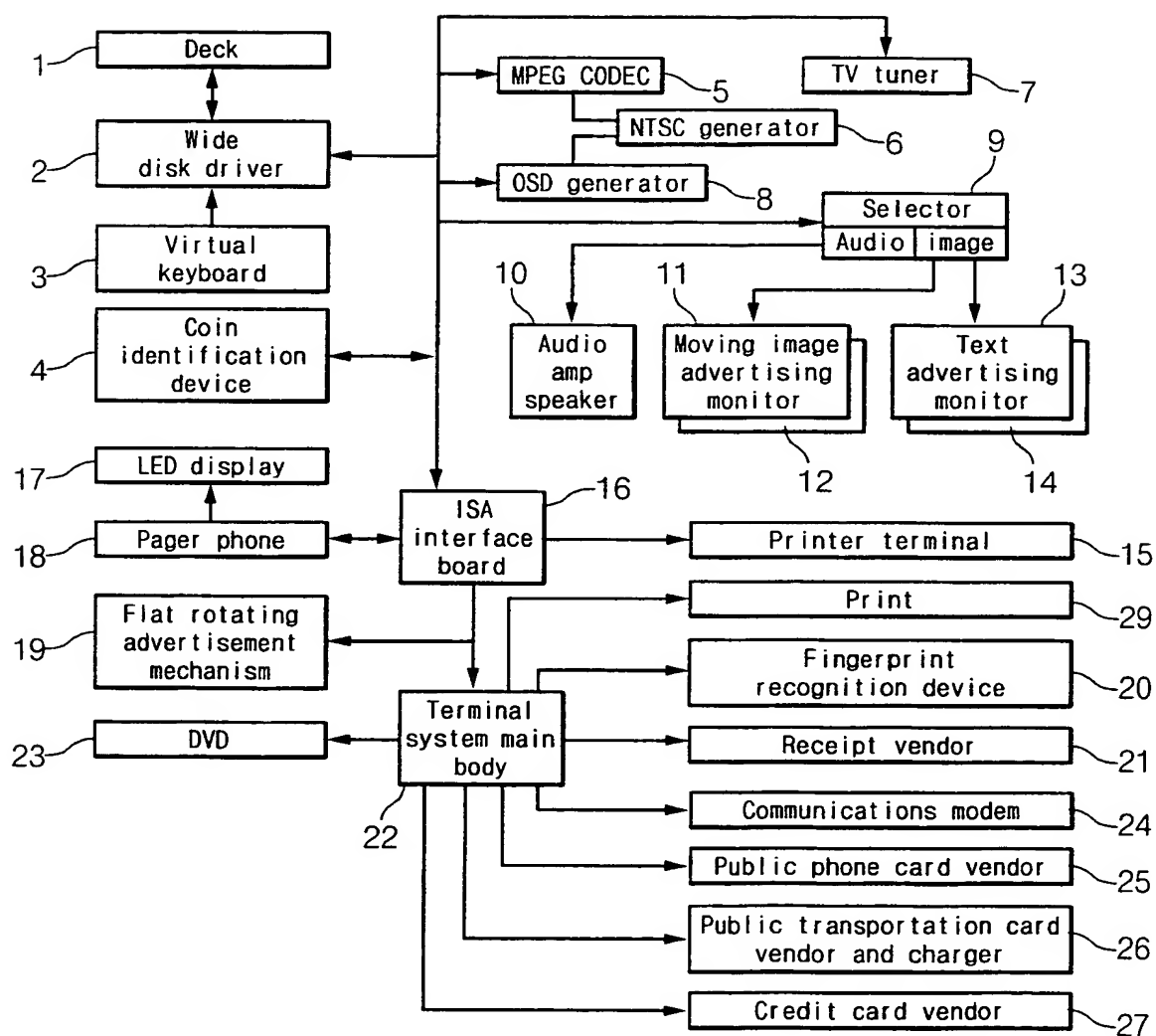
7. The system of claim 1 wherein a pager phone is connected to the terminal system main body.

8. The system of claim 1 wherein a DVD for providing images is connected to the terminal system main body.

9. The system of claim 1 wherein one or more of a receipt vender, a public telephone card vendor, a public transportation card vendor and re-charger, and a credit card vendor is provided in the terminal system main body.

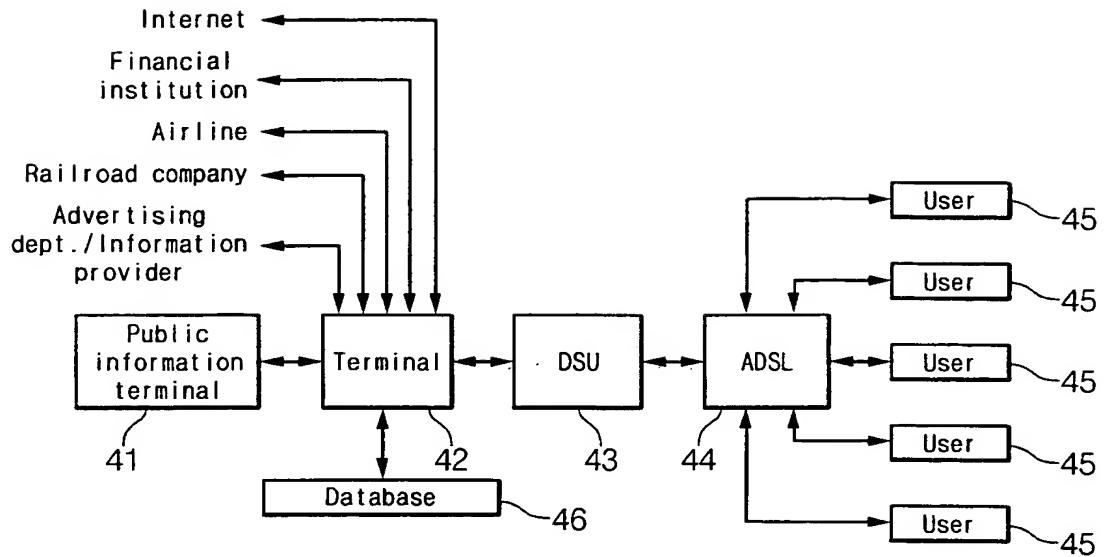
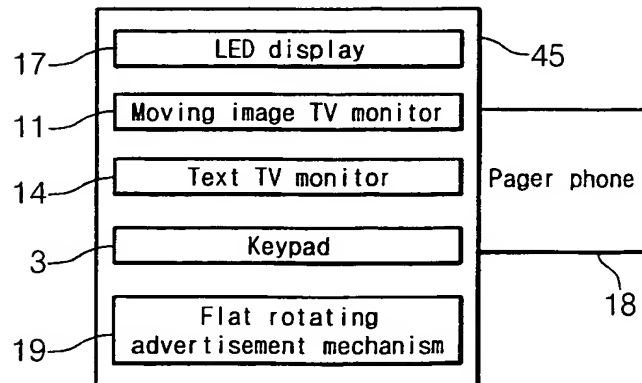
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Fig. 1



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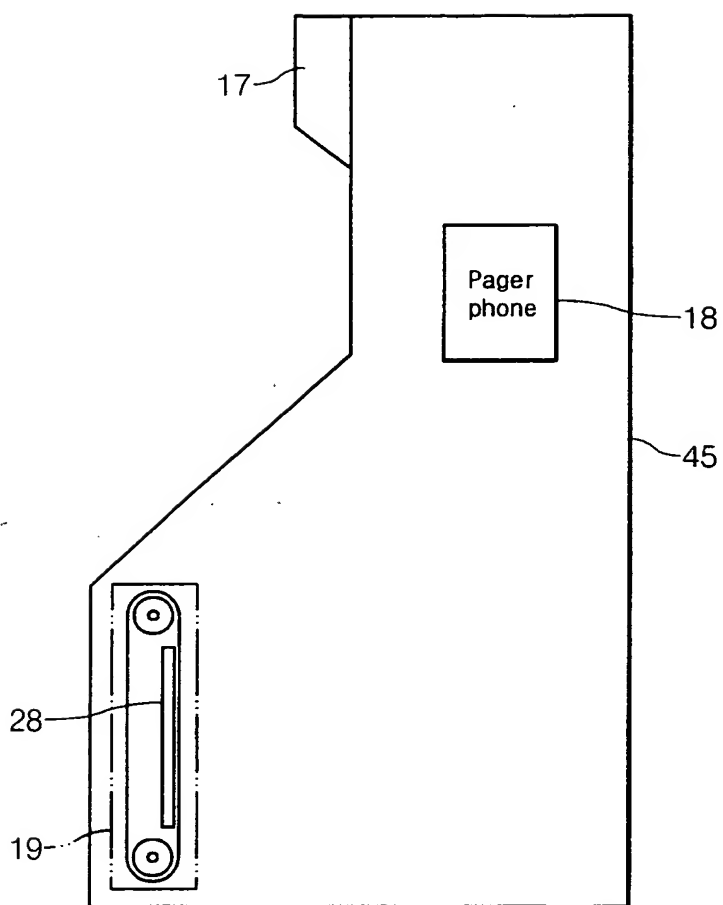
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Fig. 2**Fig. 3**

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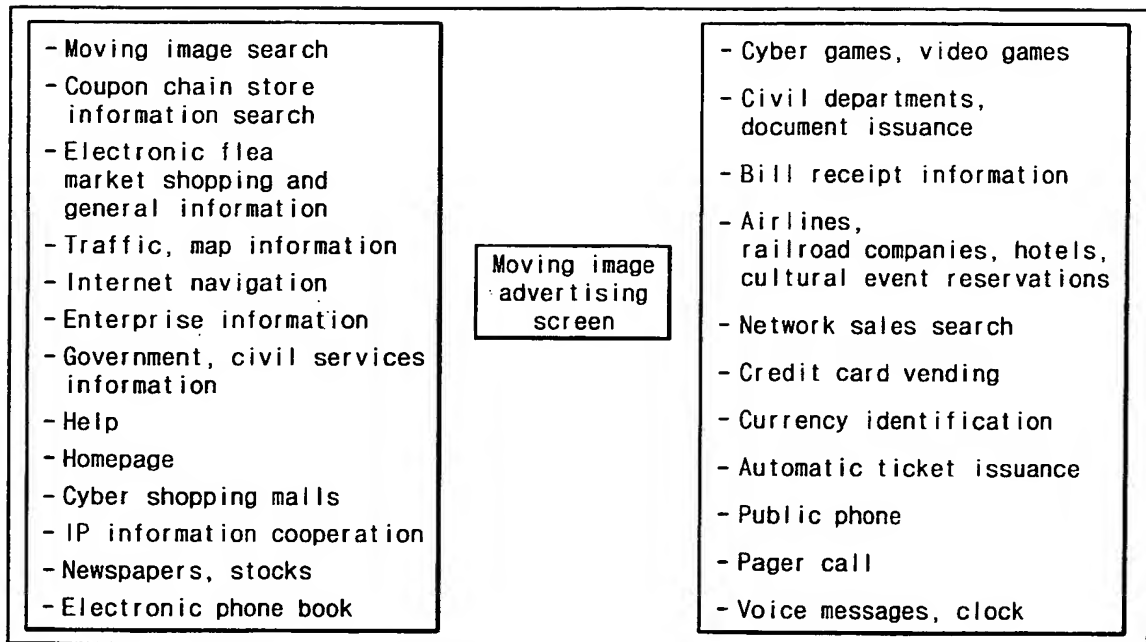
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Fig. 4



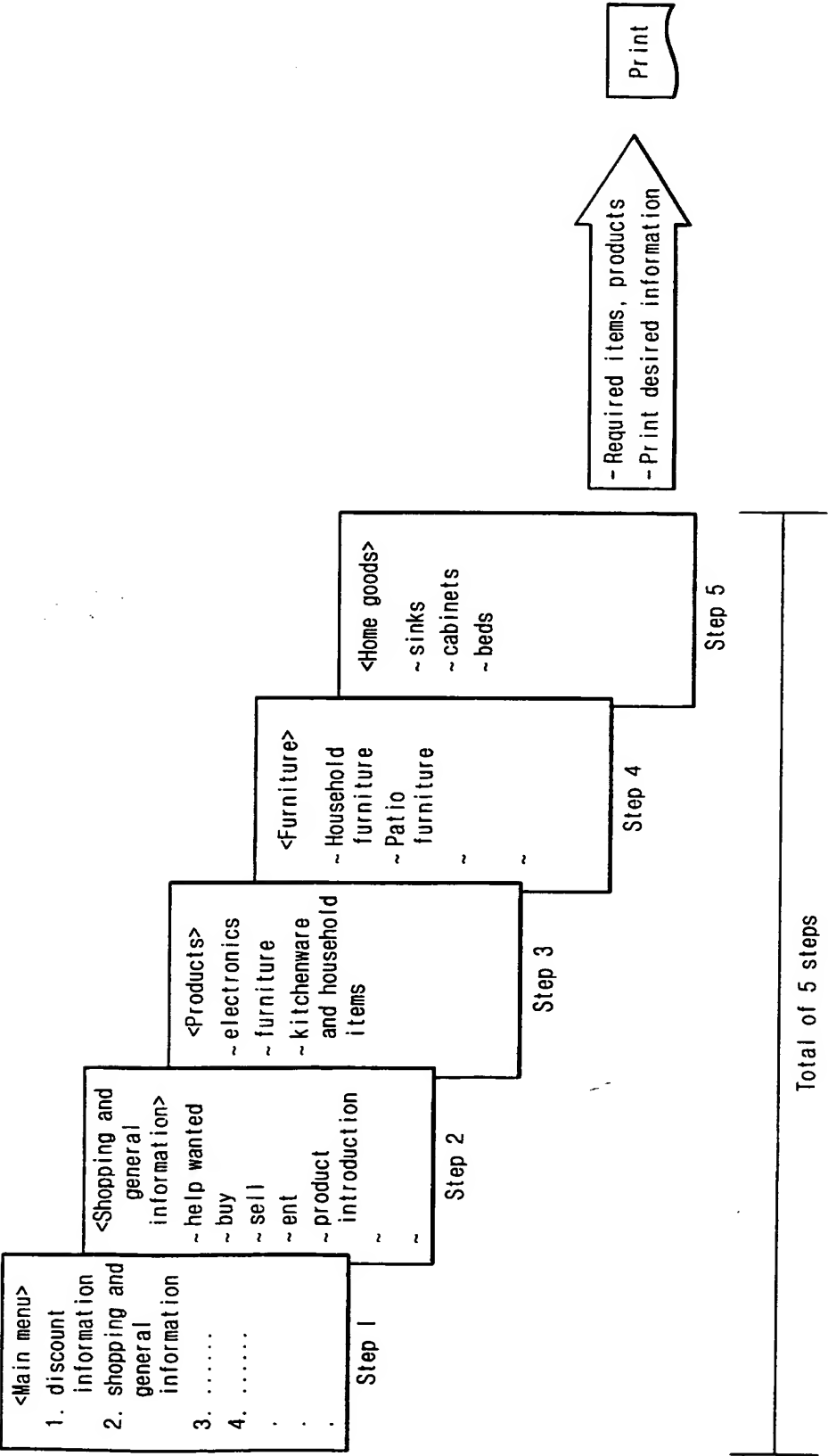
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Fig. 5

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Fig. 6



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR00/00729

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 G06F 17/60**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC H04M 11/00, IPC G06F 3/12, 19/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,817,129 A (TELAC CO.) 28. MARCH. 1989 FIG 1 - 12, ABSTRACT, CLAIMS 1, 2, 3, 5-8	1-9
A	JP11-215217 A (TOSHIBA CO.) 6. AUGUST. 1999 FIG - 14 ABSTRACT, CLAIMS 1 - 14	1-9
A	JP09-284735 A (HITACHI CO.) 31. OCTOBER. 1997 FIG 1-14, ABSTRACT, CLAIMS 1-4	1
A	JP06-244976 A (RICO CO.) 2. SEPTEMBER. 1994 FIG 1-14, ABSTRACT, CLAIMS 1, 2, 3	1

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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Date of the actual completion of the international search

18 OCTOBER 2000 (18.10.2000)

Date of mailing of the international search report

18 OCTOBER 2000 (18.10.2000)

Name and mailing address of the ISA/KR

Korean Industrial Property Office
Government Complex-Taejon, Dunsan-dong, So-ku, Taejon
Metropolitan City 302-701, Republic of Korea

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Authorized officer

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR00/00729

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 G06F 17/60**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC H04M 11/00, IPC G06F 3/12, 19/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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A	JP09-284735 A (HITACHI CO.) 31. OCTOBER. 1997 FIG 1-14, ABSTRACT, CLAIMS 1-4	1
A	JP06-244976 A (RICO CO.) 2. SEPTEMBER. 1994 FIG 1-14, ABSTRACT, CLAIMS 1, 2, 3	1

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Date of the actual completion of the international search

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Date of mailing of the international search report

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Name and mailing address of the ISA/KR

Korean Industrial Property Office
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